

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
17 June 2004 (17.06.2004)

PCT

(10) International Publication Number  
**WO 2004/050201 A1**

(51) International Patent Classification<sup>7</sup>: **A63F 9/24**

(21) International Application Number:  
PCT/US2003/038068

(22) International Filing Date: 2 December 2003 (02.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0228219.2 4 December 2002 (04.12.2002) GB

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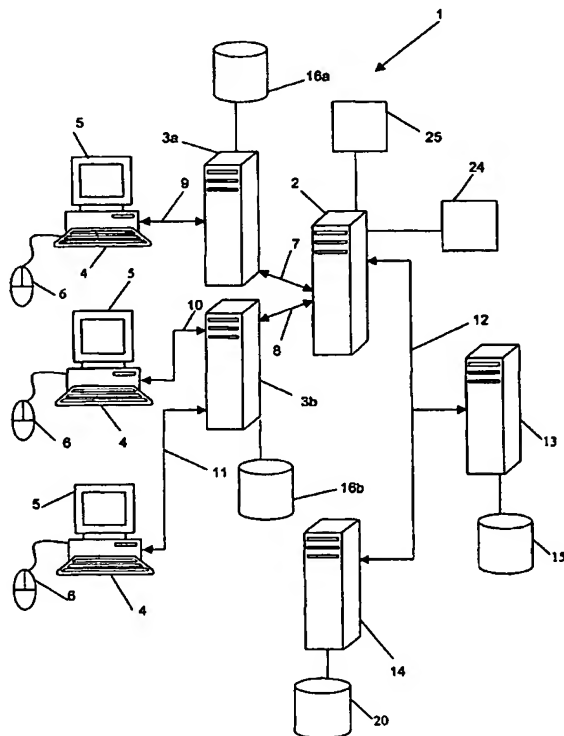
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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: COLLUSION DETECTION AND CONTROL



(57) Abstract: A system for detecting and controlling collusion in a game with a plurality of participating players. The system (1) includes a gaming server (2) and a number of portals (3a, 3b) in the form of websites on the World Wide Web in the Internet. Each of the portal websites is an on-line casino website hosted on a corresponding casino web server (not shown). Each of the casino websites (3a, 3b) is accessible by one or more would-be poker players. Each player accesses the website using a computer with a display (5) and an associated pointing device (6). The system (1) includes an administration facility (13) which communicates with the gaming server (2) along a communication channel (12). There is also a collusion detection server (14) in communication with the game server (2) via communication channel (12).



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— with amended claims

**Date of publication of the amended claims:** 26 August 2004

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**AMENDED CLAIMS**

[received by the International Bureau on 14 June 2004 (14.06.04);  
original claims 1-48 replaced by amended claims 1-30]

**Claims**

1. A system for detecting and controlling collusion in a multiplayer game having a plurality of participating players in which the players compete against each other to determine a winner, the system comprising:  
5 recording means for recording, for each player, an amount wagered on each turn of the game in which the player participates, and a corresponding outcome of said wager, the outcome being a complete or partial forfeit of the wager if the wager is unsuccessful, and a profit  
10 made on the wager if the wager is successful;  
a ranking facility operable to derive a primary statistic for each player, the primary statistic being a function of a total number of turns of the game played by the player, and the outcomes of the wagers made by the player in these turns of the game; and  
15 monitoring means for monitoring the primary statistic of each player and generating an output when the primary statistic of any player changes by more than a predetermined amount, the output being an indicator of possible collusion by that player.
- 20 2. A system as claimed in claim 1 in which the primary statistic is a ratio of a cumulative outcome of all the player's wagers and the number of turns of the game played by the player.
- 25 3. A system as claimed in either one of claims 1 or 2 which includes a storage means capable of storing the primary statistic for each player in respect of each one of a number of different levels of play of the game, a level of play being determined by wagering limits applicable to the game.
- 30 4. A system as claimed in claim 1 that includes a control facility operable to suspend a player for whom the monitoring means has generated an output, from any further participation in the game.

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5. A system as claimed in claim 4 that includes geo-location means for determining the geographical location of any participating player.
- 5      6. A system as claimed in claim 5 in which the control facility suspends any two or more players for whom the monitoring facility has generated outputs and whose geographic locations are substantially identical, from any further participation in the game, alternatively prevents any two or more players for whom the monitoring facility has generated  
10      outputs and whose geographic locations are substantially identical, from participating in a same instance of the game.
7. A system as claimed in claim 1 in which the ranking facility derives a number of secondary statistics relating to each player.
- 15      8. A system as claimed in claim 7 in which one secondary statistic is, when relating to a winning player, a breakdown of that player's winnings from the other players and in which the monitoring means generates an output if a proportion of a player's winnings from another  
20      particular player exceeds a predetermined threshold, and also generates an output for the other particular player.
9. A system as claimed either one of claims 7 or 8 in which a further secondary statistic is, when relating to a losing player, a breakdown of  
25      that player's losses to other players, and in which the monitoring means generates an output if a proportion of a player's losses to another particular player exceeds a predetermined threshold, and also generates an output for the other particular player.
- 30      10. A system as claimed in claim 7 in which the game is a variation of the game of poker.

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11. A system as claimed in claim 10 in which the variation is any one of Texas Hold'Em, Omaha or Omaha Hi/Lo and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to the flop stage of the game, a win ratio for all hands played to the turn stage of the game, a win ratio for all hands played to the river stage of the game, a play decision ratio of the number of hands played to the flop stage and the number of hands played to the river stage of the game, a win ratio for all hands in which the player raises in early position, a win ratio for all hands in which the player raises in mid position, a win ratio for all hands in which the player raises in late position, and a raise ratio for all raising hands held by the player.

12. A system as claimed in claim 10 in which the variation is any one of Seven Card Stud, Seven Card Stud Hi/Lo or Razz and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands held by the player.

13. A system as claimed in claim 10 in which the variation is Five Card Stud and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to the third street, a win ratio for all hands played to fourth street, a win ratio for all hands played to the fifth street, a play decision ratio of the number of hands played to third street to the number of hands played to fifth street, and a raise ratio for all raising hands held by the player.

14. A system as claimed in claim 10 in which the variation is Five Card Draw and in which the number of secondary statistics includes any one

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or more of a win ratio for all hands played to draw, and a raise ratio for all raising hands held by the player.

5 15. A system as claimed in claim 10 in which the variation is Manila and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands  
10 played to seventh street, and a raise ratio for all raising hands held by the player.

15 16. A method for detecting and controlling collusion in a multiplayer game having a plurality of participating players in which the players compete against each other to determine a winner, the method comprising the steps of:  
recording, for each player, an amount wagered on each turn of the game in which the player participates, and a corresponding outcome of said wager, the outcome being a complete or partial forfeit of the wager  
20 if the wager is unsuccessful, and a profit made on the wager if the wager is successful;  
deriving a primary statistic for each player, the primary statistic being a function of a total number of turns of the game played by the player, and the outcomes of the wagers made by the player in these turns of  
25 the game; and  
monitoring the primary statistic of each player and generating an output when the primary statistic of any player changes by more than a predetermined amount, the output being an indicator of possible  
30 collusion by that player.

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17. A method as claimed in claim 16 in which the primary statistic is derived as a ratio of a cumulative outcome of all the player's wagers and the number of turns of the game played by the player.
- 5      18. A method as claimed in claim 17 in which a primary statistic for each player is stored in a storage means in respect of each one of a number of different levels of play of the game, a level of play being determined by wagering limits applicable to the game.
- 10      19. A method as claimed in any one of claims 16 to 18 that includes the step of suspending a player for whom an output has been generated, from any further participation in the game.
- 15      20. A method as claimed in claim 19 that includes a further step of determining the geographical location of any participating player.
- 20      21. A method as claimed in claim 20 in which any two or more players for whom outputs have been generated and whose geographic locations are substantially identical, are suspended from any further participation in the game, alternatively in which any two or more players for whom outputs have been generated outputs and whose geographic locations are substantially identical, are prevented from participating in a same instance of the game.
- 25      22. A method as claimed in claim 16 that includes a step of deriving a number of secondary statistics relating to each player.
- 30      23. A method as claimed in claim 22 in which one secondary statistic, when relating to a winning player, is a breakdown of that player's winnings from the other players, and that includes the steps of generating an output if a proportion of a player's winnings from another

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particular player exceeds a predetermined threshold, and generating an output for the other particular player.

5 24. A method as claimed in either claim 22 or claim 23 in which a further secondary statistic, when relating to a losing player, is a breakdown of that player's losses to other players, and that includes the steps of generating an output if a proportion of a player's losses to another particular player exceeds a predetermined threshold, and generating an output for the other particular player.

10

25. A method as claimed in claim 22 in which the game is a variation of the game of poker.

15 26. A method as claimed in claim 25 in which the variation is any one of Texas Hold'Em, Omaha or Omaha Hi/Lo and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to the flop stage of the game, a win ratio for all hands played to the turn stage of the game, a win ratio for all hands played to the river stage of the game, a play decision ratio of the number of  
20 hands played to the flop stage and the number of hands played to the river stage of the game, a win ratio for all hands in which the player raises in early position, a win ratio for all hands in which the player raises in mid position, a win ratio for all hands in which the player raises in late position, and a raise ratio for all raising hands held by the  
25 player.

27. A method as claimed in claim 25 in which the variation is any one of Seven Card Stud, Seven Card Stud Hi/Lo or Razz and in which the number of secondary statistics is derived as any one or more of a win  
30 ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of



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the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands held by the player.

- 5        28. A method as claimed in claim 25 in which the variation is Five Card Stud and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to the third street, a win ratio for all hands played to fourth street, a win ratio for all hands played to the fifth street, a play decision ratio of the number of hands played to third street to the number of hands played to fifth street, and  
10        a raise ratio for all raising hands held by the player.
- 15        29. A method as claimed in claim 25 in which the variation is Five Card Draw and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to draw, and a raise ratio for all raising hands held by the player.
- 20        30. A method as claimed in claim 25 in which the variation is Manila and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands  
25        held by the player.

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**Claims**

1. A system for detecting and controlling collusion in a multiplayer game having a plurality of participating players in which the players compete against each other to determine a winner, the system comprising:  
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10 made on the wager if the wager is successful;  
a ranking facility operable to derive a primary statistic for each player, the primary statistic being a function of a total number of turns of the game played by the player, and the outcomes of the wagers made by the player in these turns of the game; and  
15 monitoring means for monitoring the primary statistic of each player and generating an output when the primary statistic of any player changes by more than a predetermined amount, the output being an indicator of possible collusion by that player.
- 20 2. A system as claimed in claim 1 in which the primary statistic is a ratio of a cumulative outcome of all the player's wagers and the number of turns of the game played by the player.
- 25 3. A system as claimed in either one of claims 1 or 2 which includes a storage means capable of storing the primary statistic for each player in respect of each one of a number of different levels of play of the game, a level of play being determined by wagering limits applicable to the game.
- 30 4. A system as claimed in claim 1 that includes a control facility operable to suspend a player for whom the monitoring means has generated an output, from any further participation in the game.

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5. A system as claimed in claim 4 that includes geo-location means for determining the geographical location of any participating player.
- 5 6. A system as claimed in claim 5 in which the control facility suspends any two or more players for whom the monitoring facility has generated outputs and whose geographic locations are substantially identical, from any further participation in the game, alternatively prevents any two or more players for whom the monitoring facility has generated  
10 outputs and whose geographic locations are substantially identical, from participating in a same instance of the game.
7. A system as claimed in claim 1 in which the ranking facility derives a number of secondary statistics relating to each player.
- 15 8. A system as claimed in claim 7 in which one secondary statistic is, when relating to a winning player, a breakdown of that player's winnings from the other players and in which the monitoring means generates an output if a proportion of a player's winnings from another  
20 particular player exceeds a predetermined threshold, and also generates an output for the other particular player.
9. A system as claimed either one of claims 7 or 8 in which a further secondary statistic is, when relating to a losing player, a breakdown of  
25 that player's losses to other players, and in which the monitoring means generates an output if a proportion of a player's losses to another particular player exceeds a predetermined threshold, and also generates an output for the other particular player.
- 30 10. A system as claimed in claim 7 in which the game is a variation of the game of poker.

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11. A system as claimed in claim 10 in which the variation is any one of Texas Hold'Em, Omaha or Omaha Hi/Lo and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to the flop stage of the game, a win ratio for all hands played to the turn stage of the game, a win ratio for all hands played to the river stage of the game, a play decision ratio of the number of hands played to the flop stage and the number of hands played to the river stage of the game, a win ratio for all hands in which the player raises in early position, a win ratio for all hands in which the player raises in mid position, a win ratio for all hands in which the player raises in late position, and a raise ratio for all raising hands held by the player.

12. A system as claimed in claim 10 in which the variation is any one of Seven Card Stud, Seven Card Stud Hi/Lo or Razz and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands held by the player.

13. A system as claimed in claim 10 in which the variation is Five Card Stud and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to the third street, a win ratio for all hands played to fourth street, a win ratio for all hands played to the fifth street, a play decision ratio of the number of hands played to third street to the number of hands played to fifth street, and a raise ratio for all raising hands held by the player.

14. A system as claimed in claim 10 in which the variation is Five Card Draw and in which the number of secondary statistics includes any one

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or more of a win ratio for all hands played to draw, and a raise ratio for all raising hands held by the player.

15. A system as claimed in claim 10 in which the variation is Manila and in which the number of secondary statistics includes any one or more of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands held by the player.

16. A method for detecting and controlling collusion in a multiplayer game having a plurality of participating players in which the players compete against each other to determine a winner, the method comprising the steps of:

recording, for each player, an amount wagered on each turn of the game in which the player participates, and a corresponding outcome of said wager, the outcome being a complete or partial forfeit of the wager if the wager is unsuccessful, and a profit made on the wager if the wager is successful;

deriving a primary statistic for each player, the primary statistic being a function of a total number of turns of the game played by the player, and the outcomes of the wagers made by the player in these turns of the game; and

monitoring the primary statistic of each player and generating an output when the primary statistic of any player changes by more than a predetermined amount, the output being an indicator of possible collusion by that player.

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17.A method as claimed in claim 16 in which the primary statistic is derived as a ratio of a cumulative outcome of all the player's wagers and the number of turns of the game played by the player.

5 18.A method as claimed in claim 17 in which a primary statistic for each player is stored in a storage means in respect of each one of a number of different levels of play of the game, a level of play being determined by wagering limits applicable to the game.

10 19.A method as claimed in any one of claims 16 to 18 that includes the step of suspending a player for whom an output has been generated, from any further participation in the game.

15 20.A method as claimed in claim 19 that includes a further step of determining the geographical location of any participating player.

20 21.A method as claimed in claim 20 in which any two or more players for whom outputs have been generated and whose geographic locations are substantially identical, are suspended from any further participation in the game, alternatively in which any two or more players for whom outputs have been generated outputs and whose geographic locations are substantially identical, are prevented from participating in a same instance of the game.

25 22.A method as claimed in claim 16 that includes a step of deriving a number of secondary statistics relating to each player.

30 23.A method as claimed in claim 22 in which one secondary statistic, when relating to a winning player, is a breakdown of that player's winnings from the other players, and that includes the steps of generating an output if a proportion of a player's winnings from another

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particular player exceeds a predetermined threshold, and generating an output for the other particular player.

5 24. A method as claimed in either claim 22 or claim 23 in which a further secondary statistic, when relating to a losing player, is a breakdown of that player's losses to other players, and that includes the steps of generating an output if a proportion of a player's losses to another particular player exceeds a predetermined threshold, and generating an output for the other particular player.

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25. A method as claimed in claim 22 in which the game is a variation of the game of poker.

15 26. A method as claimed in claim 25 in which the variation is any one of Texas Hold'Em, Omaha or Omaha Hi/Lo and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to the flop stage of the game, a win ratio for all hands played to the turn stage of the game, a win ratio for all hands played to the river stage of the game, a play decision ratio of the number of  
20 hands played to the flop stage and the number of hands played to the river stage of the game, a win ratio for all hands in which the player raises in early position, a win ratio for all hands in which the player raises in mid position, a win ratio for all hands in which the player raises in late position, and a raise ratio for all raising hands held by the  
25 player.

27. A method as claimed in claim 25 in which the variation is any one of Seven Card Stud, Seven Card Stud Hi/Lo or Razz and in which the number of secondary statistics is derived as any one or more of a win  
30 ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of

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the number of hands played to fourth street to the number of hands played to seventh street; and a raise ratio for all raising hands held by the player.

5 28. A method as claimed in claim 25 in which the variation is Five Card Stud and in which the number of secondary statistics is derived as any one or more of a win ratio for all hands played to the third street, a win ratio for all hands played to fourth street, a win ratio for all hands played to the fifth street, a play decision ratio of the number of hands  
10 played to third street to the number of hands played to fifth street, and a raise ratio for all raising hands held by the player.

29. A method as claimed in claim 25 in which the variation is Five Card Draw and in which the number of secondary statistics is derived as any  
15 one or more of a win ratio for all hands played to draw, and a raise ratio for all raising hands held by the player.

30. A method as claimed in claim 25 in which the variation is Manila and in which the number of secondary statistics is derived as any one or more  
20 of a win ratio for all hands played to fourth street, a win ratio for all hands played to fifth street, a win ratio for all hands played to sixth street, a win ratio for all hands played to seventh street, a play decision ratio of the number of hands played to fourth street to the number of hands played to seventh street, and a raise ratio for all raising hands  
25 held by the player.